



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/541,399	07/01/2005	Sang-Hyeon Kim	P2947US00	6318
58/027 7590 09/14/2010 H.C. PARK & ASSOCIATES, PLC 8500 LEESBURG PIKE SUITE 7500 VIENNA, VA 22182				
EXAMINER				
SCOTT, RANDY A				
ART UNIT		PAPER NUMBER		
2453				
NOTIFICATION DATE		DELIVERY MODE		
09/14/2010		ELECTRONIC		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

PATENT@PARK-LAW.COM

# Office Action Summary

## Application No.

10/541,399

## Applicant(s)

KIM, SANG-HYEON

## Examiner

RANDY SCOTT

## Art Unit

2453

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 28 April 2010.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-4, 8-15, 33-45 and 47-53 is/are pending in the application.
- 4a) Of the above claim(s) 33-38 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4, 8-15, 39-45 and 47-53 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB06)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notes of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

**DETAILED ACTION**

1. This Office Action is responsive to the communication filed 4/28/2010

**Claim Status**

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(c), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(c) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 4/2/10 has been entered.

2. Claims 5-7, 16-32, 42, 46, and 54 have been canceled, claims 33-38 have been withdrawn from consideration due to an election made without traverse by Attorney Chen Lee (attorney docket # 08015.0022, on April 2nd, 2009, claims 1 and 39 have currently been amended.

**Claim Rejections - 35 USC § 103**

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the

art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1-4, 8, 14, 39-41, 45-49, and 52 are rejected under 35 USC 103 (a) as being unpatentable over Carmel et al (US 6,389,473) in view of Padmanabham et al (US 2004/0143672).

Regarding claims 1 and 39, Carmel et al discloses:

Establishing connections between a user client and a plurality of nodes (see fig. 4);  
dividing streaming data into a plurality of blocks for sequential download (see fig. 3a and col. 3, lines 30-32), said plurality of blocks including a first and second blocks (see col. 3, lines 40-41, "sequence of slices");  
dividing the first block of said streaming data into a plurality of sub blocks (see col. 7, lines 25-30); monitoring download state of the established connections (see col. 2, lines 50-52), said user client receiving said sub blocks from said respective nodes via said established connections in parallel (see col. 9, lines 28-30);  
wherein the step of sending a request, the step of monitoring download state and the step of redistributing said sub blocks are repeated for downloading sub blocks included in the second block when download of all sub blocks included in the first block is completed (see fig. 8 and col. 12, lines 24-26).

However, Carmel et al does not specifically teach redistributing said sub blocks of a bad connection to other node for download if one of said established connections is determined to be the bad connection based on said monitored download state, sending a request for at least one of said sub blocks to the plurality of nodes where connection is established to download the sub blocks, monitoring state information of nodes which are not transmitting data among nodes

where connection is established, and redistributing sub blocks to be downloaded between some of the nodes which are transmitting data and some of the nodes which are not transmitting data.

Padmanabham et al provide the specified deficiencies, including redistributing said sub blocks of a bad connection to other node for download if one of said established connections is determined to be the bad connection based on said monitored download state see sec [0029], lines 13-19, which discloses redistributing streaming data to other clients based on a computer crash or disconnection), sending a request for at least one of said sub blocks to the plurality of nodes where connection is established to download the sub blocks (see sec [0026], lines 4-12, which discloses transmitting sub streams of streaming content per content request from the client), monitoring state information of nodes which are not transmitting data among nodes where connection is established (see sec [0043], lines 7-11, which discloses monitoring past network node behavior to check stability), and redistributing sub blocks to be downloaded between some of the nodes which are transmitting data and some of the nodes which are not transmitting data (see sec [0029], lines 9-17, which discloses redistributing streaming data to other clients when the current client exits the live stream).

It would have been obvious to one of ordinary skill in the art to combine Carmel et al with the general concept illustrated by Padmanabham et al in order to provide unused sub streams for nodes in a simulcast when one node is no longer taking place with the motivation of providing the benefit of improving upon teaching transmitting sub stream data evenly by redistributing a node's sub stream when that node isn't using the data.

Regarding claims 2 and 40, Carmel et al fail to disclose:

Matching said plurality of sub blocks included in the first block with each of said nodes.

Padmanabham et al provide the specified deficiencies (see sec [0038], lines 3-7, which discloses assigning child nodes to sub-streams).

It would have been obvious to one of ordinary skill in the art to combine Carmel et al with the general concept illustrated by Padmanabham et al in order to pair sub streams with appropriate nodes in a network with the motivation previously addressed.

Regarding claims 3 and 47, Carmel et al discloses:

Monitoring completion of download for each of said connected nodes, the step of redistributing said sub blocks comprises the step of redistributing sub blocks from a first node to a second node when download is completed at the second node (see col. 10, lines 12-24, which teaches that the file re-transmission occurs until the broadcast has completed).

Regarding claims 4 and 41, Carmel et al discloses:

Wherein said match of the sub blocks and the nodes is determined based on connection state valuation index, the connection state valuation index being calculated using information selected from group consisting of round-trip time with each of the nodes and average download speed from each of the nodes (see col. 13, lines 16-19, which discloses calculating compression ratios and slice duration).

Regarding claims 8 and 49, Carmel et al discloses:

Determining redistribution of said sub blocks from the first node to the second node based on the download rate and a number of remaining sub blocks of the first node (see col. 9, lines 31-35, which discloses data transmission according to data rates).

Regarding claim 48, Carmel et al disclose the method wherein the first node has the lowest download rate among the connected nodes (see col. 2, lines 57-59).

Regarding claims 14 and 52, Carmel et al disclose the step of sending a request for sub blocks to corresponding nodes by the redistribution result to download redistributed sub blocks after redistribution of sub blocks (see col. 10, lines 9-15).

4. Claims 9 and 50 are rejected under 35 USC 103 (a) as being unpatentable over Carmel et al (US 6,389,473) in view of Padmanabham et al (US 2004/0143672), further in view of Vigue et al (US 7,181,506).

Regarding claims 9 and 50, Carmel et al and Padmanabham et al do not specifically teach the step of storing information of nodes with which the connection establishment failed in a black list queue.

Vigue et al provides the specified deficiencies (see col. 2, lines 40-44).

It would have been obvious to one of ordinary skill in the art to combine Carmel et al and Padmanabham et al with the general concepts of storing information of nodes with which the connection establishment failed in a black list queue with the motivation of providing the benefit

of teaching an improvement upon content distribution upon peer nodes by determining which node is regulated to pass multicast data.

5. Claims 15 and 53 are rejected under 35 USC 103 (a) as being unpatentable over Carmel et al (US 6,389,473) in view of Padmanabham et al (US 2004/0143672), further in view of Garcia-Luna-Aceves et al (US 2002/0004846).

Regarding claims 15 and 53, Carmel et al and Padmanabham et al do not specifically teach the step of downloading streaming data by connecting to a singular server if sub block download from the plurality of the nodes fails.

Garcia-Luna-Aceves et al et al provides the deficiencies not taught by Carmel et al (see fig. 5 & sec [0099], lines 16-22).

It would have been obvious to one of ordinary skill in the art to combine Carmel et al and Padmanabham et al with the general concepts illustrated by Garcia-Luna-Aceves et al in order to sufficiently implement a image transmission system for streaming info with the motivation of providing the benefit of teaching the maximization of issuing casted content to nodes in a network by reassigning server upon failure.

6. Claims 10-12 and 43-45 are rejected under 35 USC 103 (a) as being unpatentable over Carmel et al (US 6,389,473) in view of Padmanabham et al (US 2004/0143672), further in view of Taniguchi et al (US 6,445,679).



With respect to claims 10 and 43, Carmel et al and Padmanabham et al do not specifically teach the steps of wherein the sub blocks to be downloaded from each of the nodes are determined using the node state information.

Taniguchi et al discloses the general concept of: wherein the sub blocks to be downloaded from each of the nodes are determined using the node state information (see col. 38, lines 56-64).

It would have been obvious to one of ordinary skill in the art to combine Carmel et al and Padmanabham et al with the general concept illustrated by Taniguchi et al with the motivation of providing the benefit of teaching an improvement upon transmitting data blocks amongst nodes by using threshold data.

With respect to claims 11 and 44, Carmel et al and Padmanabham et al do not specifically teach wherein sub blocks to be downloaded from each of the nodes are determined by state information of nodes in initial state of download, after determination of download speed from each of the nodes, sub blocks to be downloaded from each of the nodes are determined using connection state valuation index which is calculated using information selected from group consisting of round-trip time with each of the nodes and average download speed from each of the nodes.

Taniguchi et al discloses the general concepts of: wherein sub blocks to be downloaded from each of the nodes are determined by state information of nodes in initial state of download (see col. 3, lines 29-33), after determination of download speed from each of the nodes, sub blocks to be downloaded from each of the nodes are determined using connection state valuation

index which is calculated using information selected from group consisting of round-trip time with each of the nodes and average download speed from each of the nodes (see col. 2, lines 44-48, which discloses transmission rate calculation).

It would have been obvious to one of ordinary skill in the art to combine Carmel et al and Padmanabham et al with the general concept illustrated by Taniguchi et al with the motivation previously addressed.

With respect to claims 12 and 45, Carmel et al and Padmanabham et al do not specifically teach wherein the connection establishment with the plurality of nodes is performed using state information of the nodes in step of establishing connections.

Taniguchi et al discloses the general concepts of: wherein the connection establishment with the plurality of nodes is performed using state information of the nodes in step of establishing connections (see col. 9, lines 18-25).

It would have been obvious to one of ordinary skill in the art to combine Carmel et al and Padmanabham et al with the general concept illustrated by Taniguchi et al with the motivation previously addressed.

7. Claims 13 and 51 are rejected under 35 USC 103 (a) as being unpatentable over Carmel et al (US 6,389,473) in view of Padmanabham et al (US 2004/0143672), further in view Liva et al (US 2002/0136203).

With respect to claims 12 and 45, Carmel et al and Padmanabham et al do not specifically teach determining download error using checksum value of downloaded sub blocks.

Liva et al discloses the general concept of: determining download error using checksum value of downloaded sub blocks (see sec [0087], lines 5-7, “sub-block” & “checksum”).

It would have been obvious to one of ordinary skill in the art to combine Padmanabham et al with the general concept illustrated by Liva et al in order to successfully control packet transmission in a network with the motivation of providing the benefit of improving upon sub block redistribution by implementing a check sum for downloaded or streaming content to determine source reliability.

## **8. *Response to Arguments***

9. Applicant's arguments filed on 4/28/10 have been fully considered and are persuasive.

A. In response to the applicant's argument that Carmel et al (US 6,389,473) fails to teach or suggest monitoring state information of nodes which are not transmitting data among nodes where connection is established or redistributing sub blocks to be downloaded between some of the nodes which are transmitting data and some of the nodes which are not transmitting data:

The applicant's argument has been taken into consideration; however, prior art reference Padmanabham et al (US 2004/0143672) has been cited, which discloses an embodiment for redistributing streaming data and sub-streams during a live stream when one user tunes out of a live stream (see Padmanabham et al, sec [0029], lines 9-17, which discloses redistributing

streaming data to other clients when the current client exits the live stream). Padmanabham et al also disclose monitoring state information of nodes which are not transmitting data among nodes where connection is established (see sec [0043], lines 7-11, which discloses monitoring past network node behavior to check stability). In this instance, the state of the node when the node is not receiving or transmitting data is being checked because the node's past history is being analyzed.

B. In response to the applicant's allegation that Carmel and Yao et al do not disclose wherein the slices are further divided into sub slices (or dividing streaming blocks of data into a plurality of sub blocks) or dividing a first block of data into a plurality of sub blocks:

The examiner stands behind the assertion that the slices discussed within Carmel correlate to the claimed sub blocks because the slices are comprised of sequence segments of streams (as discloses in col. 2, lines 3-5 of Carmel). The applicant doesn't specifically teach a hierarchy level for sub blocks and one of ordinary skill in the art would consider a data stream partitioned into different segments or slices to perform the same function as a sub block or sub stream that is a divided block of data.

### Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Randy A. Scott whose telephone number is (571) 272-3797. The examiner can normally be reached on Monday-Thursday 7:30 am-5:00 pm, second Fridays 7:30 am-4pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joseph Thomas can be reached on (571) 272-6776. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/RANDY SCOTT/

Examiner, Art Unit 2453

20100901

/THUHA T. NGUYEN/

Primary Examiner, Art Unit 2453

